

What is claimed is:

Claim 1. A swivel adaptor assembly for liquid storage tanks, the assembly comprising a swivel fitting for liquid communication with a pipe mounted stationary with respect to the tank, and an adaptor releasably secured to the upper end of the swivel fitting.

Claim 2. A swivel adaptor assembly according to Claim 1, wherein

Said swivel fitting includes a swivel section and a base section, said swivel section includes said upper end and said base section being secured to said pipe, and wherein said swivel section is releasably coupled to said base section and wherein said swivel section is rotatable relative to said base section.

Claim 3. A swivel adaptor assembly according to Claim 2, wherein

the swivel section rotates relative to the base section in response to forces applied to the adaptor which forces are less than the force required to release said adaptor from securement with said swivel section.

Claim 4. A swivel adaptor assembly according to Claim 2, further including a device located between said adaptor and said swivel section for providing a fluid seal there between.

Claim 5. A swivel adaptor assembly according to Claim 4, further including a second device located between said base section and said swivel section for providing a fluid seal there between.

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Claim 6. A swivel adaptor assembly according to Claim 1, further including a retaining groove formed around at least a portion of the swivel section and retaining means secured with said base section extending in said groove for securing the axial position of said base section relative to said swivel section.

Claim 7. A swivel adaptor assembly according to Claim 1, wherein one of said base section includes a first side wall with an upward facing first surface that defines a guide channel or a guide projection and said swivel section includes a second side wall with a downward facing second surface that defines a the other of said guide channel or guide projection, said guide projection extending into the guide channel for guiding the rotation of said swivel section relative to said base section.

Claim 8. A swivel adaptor assembly according to Claim 1, wherein said base section includes a first side wall with an upward facing first surface that defines a support channel and said swivel section includes a second side wall with a downward facing second surface that defines a support projection, said support projection extending into the support channel for transferring downward forces from said swivel section to said base section.

Claim 9. A swivel adaptor assembly according to Claim 1, further including a retaining groove formed around at least a portion of the swivel section and retaining means secured

with said base section extending in said groove for securing the axial position of said base section relative to said swivel section, said retaining means being selectively releasable from said base section to enable disassembly of said swivel section from said base section.

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Claim ~~9~~. A swivel adaptor assembly according to Claim 9, wherein during operation said retaining means transfers upward forces applied to the adaptor from said swivel section to said base section.

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Claim ~~10~~. A swivel adaptor assembly according to Claim 1, wherein said swivel section is made of one metal material and the adaptor is made of a different metal material.

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Claim ~~11~~. A swivel adaptor assembly according to Claim 10, wherein said base section is made of the same material as said swivel section.

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Claim ~~12~~. A swivel adaptor assembly according to Claim 6, wherein said retaining means includes at least two bolts threaded through spaced openings in said base section.

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Claim ~~13~~. A swivel adaptor assembly according to Claim 1, wherein said base section includes male or female threads for securing the base section to the tank pipe.

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Claim ~~14~~. A swivel adaptor assembly according to Claim 1, wherein said adaptor

includes threads at its lower end and said swivel section includes threads at its upper end for releasably securing the swivel section to said adaptor.

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Claim 15. A swivel adaptor assembly according to Claim 4, wherein said swivel section includes a third upward facing surface and said adaptor includes a third downward facing surface and said device includes a gasket located between said third upward and downward facing surfaces.

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Claim 16. A swivel adaptor assembly according to Claim 1, wherein one of said swivel section and adaptor forms a sealing groove and said second device includes an O-ring seated in said sealing groove.

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Claim 17. A swivel adaptor assembly according to Claim 1, wherein said adaptor and said swivel section define tool engaging means for increasing the force required to release the adaptor from securement with said swivel section and for releasing said swivel section from said adaptor.